N° 21,286 A.D. 1897

Date of Application, 16th Sept., 1897

Complete Specification Left, 16th June, 1898—Accepted, 6th Aug., 1898

PROVISIONAL SPECIFICATION.

Improvements in Washing-machines.

I, CHARLES DUNSFORD JENKINS, M.D., of 130, Huntington Avenue, Boston, Massachusetts, United States of America, do hereby declare the nature of this invention to be as follows:—

My invention relates to washing-machines, and more particularly to machines of that kind or class in which the clothes or the like to be washed are placed in a revolving drum or chamber wherein they are subjected to the action of jets of soapy water or other detergent liquid. And my said invention is chiefly designed to render such machines more efficient in their operation than heretofore.

One feature of my said invention is the provision which I make for effectually cleaning those portions of the clothes or the like which lie next the ends of the revolving drum or chamber as well as those portions which lie in the middle of the said drum or chamber. For this purpose I provide at one end of the said drum a central chamber in the circumference of which are fixed perforated pipes that extend radially to or nearly to the circumferential wall of the revolving drum, then longitudinally along the interior thereof and then inward towards the axis of the drum at the other end of the said drum. The liquid is forced under pressure into the said central chamber and through the said perforated pipes, whence it issues in a large number of jets, some of which are directed from the ends of the drum towards the middle thereof, while others are directed from the periphery of the said drum inward or towards its axis. The efficient washing of all parts of the clothes or the like is thus ensured.

Another feature of my said invention is the employment of a steam-jet injector for inducing a current of the liquid into the said central chamber and forcing it under a suitable pressure into and through the said perforated pipes. In some instances I also provide for the circulation of the liquid through the revolving drum and its casing by means of the said steam-jet injector.

I find it advantageous to connect a stationary liquid-supply-pipe with the aforesaid central chamber in the revolving drum by means of a suitable stuffing-box, and to combine the injector-nozzle with the said supply-pipe in such a manner that the jet of steam together with the induced current of the liquid will be forced into the said central chamber. I also, in some instances, connect the said supply-pipe by means of a branch-pipe with the lower part of the casing in which the drum revolves, and provide one or more suitable cocks or valves so arranged that the said injector can be used, when desired, for drawing the liquid from the lower part of the said casing and forcing it into the said central chamber, thus causing the liquid to circulate through the revolving drum and act repeatedly upon the clothes or the like therein.

Dated the 16th day of September 1897.

D. YOUNG & Co.,
11 & 12, Southampton Buildings, London, W.C.,
Agents for the Applicant.

[*Price* 8*d*.]

COMPLETE SPECIFICATION.

Improvements in Washing-machines.

I, CHARLES DUNSFORD JENKINS, M.D., of 130, Huntington Avenue, Boston, Massachusetts, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to washing-machines and more particularly to machines of that kind or class in which the clothes or the like to be washed are placed in a revolving drum or chamber wherein they are subjected to the action of jets of soapy water or other detergent fluid. And my said invention is chiefly designed to render such machines more efficient in their operation than heretofore.

One feature of my said invention is the provision which I make for effectually cleaning those portions of the clothes or the like which lie next the ends of the revolving drum or chamber as well as those portions which lie in the middle of the said drum or chamber. For this purpose I provide at one end of the said drum a central chamber in the circumference of which are fixed perforated pipes that extend radially to or nearly to the circumferential wall of the revolving drum, then longitudinally along the interior thereof and then inward towards the axis of the drum at the other end of the said drum. The fluid is forced under pressure into the said central chamber and through the said perforated pipes, whence it issues in a large number of jets, some of which are directed from the ends of the drum towards the middle thereof, while others are directed from the periphery of the said drum inward or towards its axis. The efficient washing of all parts of the clothes or the like is thus ensured.

Another feature of my said invention is the employment of a steam-jet injector for inducing a current of detergent liquid into the said central chamber and forcing it under a suitable pressure into and through the said perforated pipes. In some instances I also provide for the circulation of the said liquid through the revolving drum and its casing by means of the said steam-jet injector.

My said invention, moreover, comprises other improvements hereinafter described.

In the accompanying drawing I have shown how my said invention may be conveniently and advantageously carried into practice.

Figure 1 is a vertical longitudinal section of one form of washing-machine having my improvements applied thereto.

Figure 2 is a transverse section of the rotary drum on the line x—x, Figure 1.

Figure 3 is a partial longitudinal section of a washing-machine, illustrating another form or modification of my invention.

A is the outer closed tank of the washing-machine; B is a cylindrical (or polygonal) vessel or drum which is mounted on trunnions C, C^1 in the interior of the said tank A, and to which rotary motion is imparted through suitable gearing. On the inner end of the trunnions C^1 of the drum B is formed or fixed a central chamber D, and in the circumference of this chamber are fixed perforated pipes E which extend first radially outward close to the head B^1 of the drum, then along the circumferential wall B^2 thereof to the other head B^3 and then inwards or towards the axis of the said drum, where they are, if desired, connected with a central chamber D^1 formed or fixed on the trunnion C, which chamber may also be perforated.

The trunnion C^1 is made with a longitudinal passage through it, which communicates at one end with the chamber D; the other end of this hollow trunnion is connected, by means of a gland and stuffing-box F, with a stationary pipe G through which a supply of hot water, steam, or other detergent fluid can be forced

into the chamber D in any suitable manner, for example, by means of a pump, or by arranging a water supply-tank at a suitable elevation; a drain-pipe A^1 or the like can be provided for carrying off the surplus liquid from the tank A, or the liquid in the machine may be circulated by means of a pump or the like.

When water or other detergent fluid is thus forced into the chamber D, it will issue from the perforated pipes E in a large number of jets, those jets from the heads B^1, B^3 being directed towards the middle of the drum, and those from the circumferential wall B^2 towards the axis of the drum, thus all parts of the clothes or other articles in the drum B will be very efficiently washed.

In the arrangement shown in Figure 3, the pipe G is put into communication with the tank A below the level of the liquid therein, by means of a pipe G^1; and a steam-jet injector H is arranged in a suitably-formed chamber G^2 at the upper end of the said pipe G^1 and is supplied with steam through a pipe H^1, for the purpose of drawing the liquid up through the pipe G^1 and forcing it through the hollow trunnion C^1 into the chamber D and perforated pipes E. In this manner the liquid is continuously circulated through the tank A, pipe G^1, trunnion C^1, central chamber D, and perforated pipes E, and, after coming into contact with the articles to be washed in the drum B, returns to the tank A through the perforations in the said drum.

Instead of forcing liquid through the perforations in the pipes E as above described, I can, if desired, force steam only through the said pipes. For this purpose, I provide a cock G^3 in the pipe G^1 so that the liquid from the tank A will be prevented from rising in the said pipe, and only steam from the nozzle H will pass into the chamber D.

If desired, hot air can be introduced through the chamber D and perforated pipes E for the purpose of drying the articles or for carrying off the vapour of any volatile cleansing material such as benzine or benzoline, which, in this way, could be recovered.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

First. A washing-machine in which the clothes or other articles to be washed are subjected to the action of jets of detergent fluid directed from the ends of the rotary drum towards the middle thereof and also from the circumferential wall towards the axis thereof, substantially as, and for the purpose, hereinbefore described.

Second. A washing-machine constructed with a central chamber communicating with a hollow trunnion of the rotary drum, and with perforated pipes extending outward from the said chamber towards the wall of the said drum, then along the said wall and then towards the axis of the said drum, with or without a steam-jet injector, all substantially as described with reference to the accompanying drawing and for the purposes specified.

Dated the 16th day of June 1898.

D. YOUNG & Co.,
11 & 12, Southampton Buildings, London, W.C.,
Agents for the Applicant.

Redhill: Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd.—1898

A.D. 1897. Sep. 16. No. 21,286.
JENKINS' Complete Specification.

(1 SHEET)

Fig. 1.

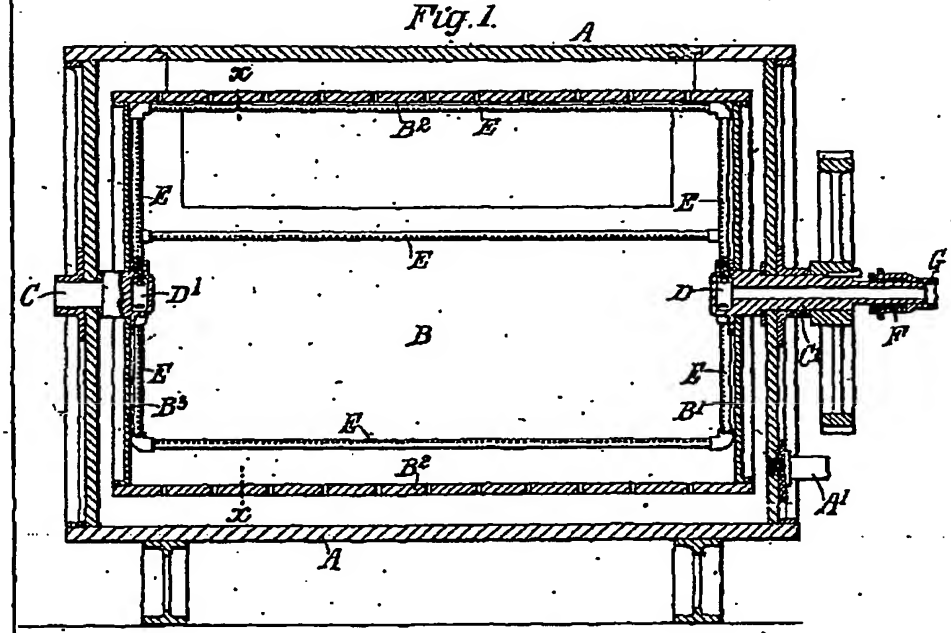


Fig. 2.

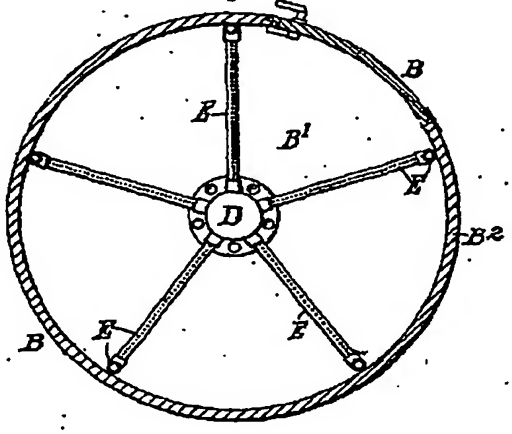
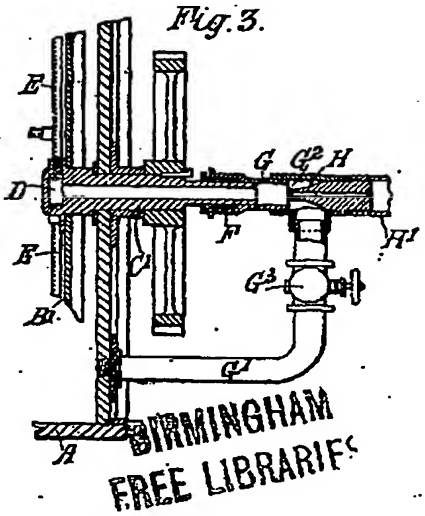


Fig. 3.



Malby & Sons, Photo-Litho.

[This Drawing is a reproduction of the Original on a reduced scale.]